Implementation of a Family Support Grant to Subsidize Caregiving Needs and Support Attendance at American Society for Nutrition's Annual Professional Scientific Conference

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ABSTRACT

Attendance at professional society meetings facilitates networking, collaboration, and success in academic/scientific fields. Insufficient funds, support, or resources for caregiving can inhibit attendance for parents/caretakers, who may become professionally disadvantaged by not attending professional society conferences. The American Society for Nutrition (ASN) offered a family support grant for caregiving needs during the annual conference (maximum: $750); however, the perceived impact of caregiving funds on attendance outcomes is unknown. The objective of this study was to assess the need of family support for attendance to the ASN annual conference among applicants and to assess recipients' experience and usage of funds. Applicants completed a pre-conference survey assessing requested funds, out-of-pocket caregiving expenses to attend the meeting, the influence of receiving the grant on attendance, and additional factors. Recipients completed a post-conference survey assessing use of the funds and impact of the grant on attending/participating. Grant applications ($n = 110$) were majority women, aged 26–45 y, married, at the trainee or assistant professor level, from diverse racial/ethnic backgrounds, and with parenting noted as the primary responsibility. Thirty-seven percent of applicants were currently lactating or expressing milk. The average amount requested was $650 US dollars, and >60% of respondents indicated plans to use funds to bring a family member/friend to the conference. Seventy-seven percent of respondents indicated that receiving the grant would influence their attendance. The post-conference survey ($n = 25$) indicated that recipients felt that receiving the grant was helpful in attending the conference (92%), specifically attending scientific sessions (96%) and poster sessions (80%). Recipients indicated the grant helped them network with attendees (88%), visit the exhibitor hall (72%), and participate in career development activities (64%). The ASN family support grant aided attendance and supported recipients' participation in conference activities, particularly early-career women who are parents, with the goal of supporting diversity and inclusivity in scientific/academic fields. This trial was registered at www.clinicaltrials.gov as NCT03432585. *Curr Dev Nutr* 2022;6:nzac076.

Keywords: professional development, equity, support for early career scientists, nutrition scientists, conference scholarships

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Supplemental Figure 1 is available from the "Supplementary data" link in the online posting of the article and from the same link in the online table of contents at https://academic.oup.com/cdn/.

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Introduction

In the United States, women represent about half (52.9%) of individuals who are awarded with PhDs (1) and MDs (47.9%)(2), with an even larger proportion of women awarded with PhDs in the health sciences (77.7%) (1). Despite the large proportion of women who start their careers with professional degrees within academia, women are particularly underrepresented at the full professor level and in leadership positions (3–5). While there are a myriad of reasons for this disparity (6), one potentially significant factor is the lower participation by women in professional societies and their annual meetings, with the important professional development, peer support, and leadership and networking opportunities that these meetings provide.

There are numerous barriers to attending annual meetings, particularly for early-career women. Specifically, women are more likely to indicate that they are unable to attend annual meetings of their professional societies due to caregiving responsibilities (7, 8). Given the barriers to participation in professional society meetings, women are less likely to hold leadership positions, be invited to speak, or receive awards (particularly research-related awards) in professional society settings, such as annual conferences (9–25).

Professional societies that fail to implement policies at annual meetings focused on accommodating the primary caregiver of young children and those with other significant caregiving responsibilities [who are typically women (26–29)] reduce opportunities for early-career caregivers to engage in important career development and advancement opportunities (8). More recently, there is a growing consensus that funding should be available to cover caregiving-related costs for professional society meetings that includes providing child care and lactation rooms at the conference location and allowing children into the exhibit hall (8, 30–34); however, the adoption of these policies and programs is far from universal. One barrier to implementation of these policies and programs by professional societies may be the lack of awareness of the need for these resources as well as estimates of what the costs to the professional society may be associated with providing these resources.

Thus, the aim of the current study was to examine the characteristics of those who apply for family support grants to off-set caregiving expenses while attending the Nutrition annual meeting, sponsored by the American Society for Nutrition (ASN) in the years 2018–2020. We also examined what the funds were used for, what other family-friendly resources were utilized at the conference, and what barriers were overcome with these grants.

Methods

Subjects

ASN had approximately 3000 members at the time of this study and advertised the opportunity for 2 mo each year to apply for the family support grant through ASN newsletters, social media, and on their website. Individuals were eligible to apply if they were presenting an accepted abstract, were invited as a speaker, and/or if they served in a leadership role. Only 1 parent/caregiver from each family could apply for the grant. Priority was given to members who were students, postdoctoral fellows, and early-career scientists. Applicants to the family support grant for the ASN annual conferences from 2018 to 2020 were recruited to participate in an online survey that was presented along with the application. There were 26 applicants in 2018, 56 applicants in 2019, and 28 applicants in 2020, for a total of 110 applicants over the 3 y (**Supplemental Figure 1**). Demographic data between applicants and meeting attendees were similar. The majority of applicants were student members or associate/regular members and, similarly, the majority of attendees were student or associate/regular members. Recipients of the family support grant were asked to complete an additional follow-up survey after the conference in 2018 and 2019. All available grant funds were distributed among selected applicants. Due to the impact of the coronavirus disease 2019 (COVID-19) pandemic, no follow-up survey was conducted in 2020 as the annual conference was virtual and no family support grants were distributed. Thirteen grant recipients completed the post-conference survey in 2018 (50% of those awarded the grant) and 12 grant recipients filled it out in 2019. Ethical approval for the study protocol was obtained through the University of Florida Institutional Review Board (IRB 201800142) and a waiver of documentation of informed consent was given by all participants. This waiver of documentation of informed consent, approved by the University of Florida's Institutional Review Board, provided information for participants regarding why they were asked to take part in the study, the risks and benefits of the voluntary survey, and the confidentiality and anonymity of survey responses. This waiver also informed them of their right to withdraw at any point.

Instruments

Applicant survey.

The applicant survey assessed self-reported sociodemographic characteristics, including age range, gender, race/ethnicity, marital status, parent/caregiver status, career level, and breastfeeding or pumping status (if appropriate). Caregiver was differentiated from parent/guardian and defined as a person who takes primary responsibility for someone who can not care fully for themselves (e.g., an elderly parent). In the survey, career-level options ranged from undergraduate student to professor emerita and included the option to fill in another career-level descriptor. Funding and conference expense information was also assessed including how the applicant planned to fund attendance to the conference and the estimated out-of-pocket caregiving expenses that would be incurred as a result of conference attendance.

Among the potential grant options, each applicant was queried as to which care option would most likely be used, including *1*) on-site care options, *2*) bringing a family member/friend to the conference site, *3*) transferring the dependent(s) to a caregiver outside the home community, or *4*) home care. The likelihood of conference attendance with or without the subsidy of a family support grant was also asked using a 5-point Likert scale, ranging from "extremely" to "not at all." The most significant barriers to conference attendance were assessed for each applicant (multiple options could be selected). Options included the following: *1*) lack of someone to care for dependent(s), *2*) financial reasons, *3*) currently breastfeeding or pumping breast milk, *4*) burdening partner with dependent care, *5*) being away from dependents, *6*) lack of family/friend support for caregiving, *7*) partner disapproval of attendance due to caregiving burden, *8*) inability to leave work or get duties covered, and *9*) other (participants could enter free text). The greatest perceived value of the family support grant was also assessed, and

potential responses included the following: *1*) fiscal reasons, *2*) caregiving reasons (e.g., breastfeeding), *3*) enhancement of experience and participation in the conference by freeing time and mental resources to focus on science, *4*) improvement of conference experience through alleviation of inconvenience of balancing caregiving with the conference, or *5*) other (participants could enter free text). After applicants completed the survey, staff at the ASN anonymized the data before sending the responses to the research team for analysis.

Recipient survey.

Recipients of the family support grant were asked to complete a follow-up survey to evaluate the utilization of awarded funds and the perceived effect of the family support grant on overall conference experience. A dichotomous question was used to determine whether or not each recipient utilized family-friendly services at the conference.

Each recipient was queried as to which subsidy option was chosen for use: *1*) on-site care options, *2*) bringing a caregiver to the conference site, *3*) home care, or *4*) other. As a follow-up to the applicant survey, each recipient was queried again regarding what barriers the family support grant assisted with and what recipients perceived to be the greatest value of the subsidy. The helpfulness of receiving the family support grant to *1*) attend the conference, *2*) network with other attendees, *3*) attend scientific sessions, *4*) participate in career development activities, *5*) visit the exhibit hall, *6*) attend poster sessions, and *7*) other aspects was assessed using a 5-point Likert scale response ranging from 1 (strongly disagree) to 5 (strongly agree). Efforts were made by the conference to ensure inclusivity by allowing children into the exhibit hall and making lactation/pumping rooms available. However, participants were asked to indicate how helpful various services might be if they were made available at future conferences, including *1*) an online forum for attendees to notify others they are searching for or providing childcare, *2*) an on-site childcare option provided at the conference site (with payment per hour or per day), *3*) complimentary on-site childcare, *4*) complimentary access to Care.com to assist with finding childcare while attending the conference, or *5*) other (participants could enter free text), were assessed using a 5-point Likert scale response ranging from 1 (not helpful at all) to 5 (extremely helpful).

Data collection

The applicant pre-survey was open for participation through the ASN annual conference website for 2 mo and the recipient follow-up survey was open for 1 mo. All recipients were asked to fill out the post-conference survey.

Statistical analysis

Median (quartile 1, quartile 3) values were calculated for each continuous variable and counts (percentages) for categorical variables. Missing values, and values where participants refused to report answers to survey questions, were grouped together as missing. Free-text responses and values with low counts were grouped together as "Other." Values that were deemed unreliable, such as a requested amount of $100,000, were recoded as missing. Tables were created with summary statistics across all 3 y for the pre-conference survey and across 2018 and 2019 for the post-conference survey.

TABLE 1 Demographic characteristics of survey respondents[1]

Characteristics	Values
Gender	
Male	18 (16%)
Female	75 (68%)
Transgender	1 (1%)
Not reported	16 (15%)
Age (years)	
26–45	87 (79%)
46–65	7 (6%)
65+	16 (15%)
Race	
White/Caucasian	43 (39%)
Black	14 (13%)
Asian	25 (23%)
American Indian/Alaskan Native/Native Hawaiian/Other Pacific Islander	3 (3%)
Multiracial	5 (5%)
Not reported	18 (16%)
Ethnicity	
Hispanic/Latinx	12 (11%)
Not Hispanic/Latinx	74 (67%)
Not reported	24 (22%)
Marital status	
Married/domestic partnership/living with someone	84 (76%)
Divorced or widowed	3 (3%)
Single/never married	5 (5%)
Not reported	18 (16%)
Career level	
Trainee (undergraduate, graduate, postdoctoral associate)	51 (46%)
Assistant professor	18 (16%)
Associate professor	4 (4%)
Professor	2 (2%)
Other	16 (15%)
Not reported	19 (17%)
Caregiving responsibilities	
Caregiver	3 (3%)
Parent/guardian	67 (61%)
Both	17 (15%)
Not reported	23 (21%)
Currently breastfeeding or pumping	
No	51 (46%)
Yes	41 (37%)
Not reported	18 (16%)

[1]Values are *n* (%). $n = 110$.

Results

Applicants ($n = 110$) completed the family support grant pre-conference survey from 2018 to 2020 (**Table 1**). Applicants were likely to identify as a woman (68%); be in the 26–45-y age range (79%); identify as White (39%), Asian (23%), Black (13%), or Hispanic/Latinx (11%); be married, in a domestic partnership, or living with someone (76%); and be a trainee (46%). Most applicants were either a parent/guardian (61%) or a parent/guardian and a caregiver (15%). Thirty-seven percent of applicants were currently breastfeeding or pumping milk. Refusing to report or providing no information on a demographic variable was common (~15% for each variable).

In the pre-conference survey (**Table 2**), applicants requested grant support amounts of a median (quartile 1, quartile 3) of $650 ($400, $900). Applicants reported that the out-of-pocket costs they expected to

TABLE 2 Survey results from grant applicants[1]

Characteristics	Values
Grant amount requested, mean (range), US dollars	650 (400, 900)
Not reported, *n*	21
Out-of-pocket caregiving expenses to attend the meeting above normal caregiving costs	
$0–$200	0 (0%)
$201–$400	22 (20%)
$401–$600	19 (17%)
$601–$800	16 (15%)
$801–$1000	16 (15%)
$1000+	20 (18%)
Not reported	17 (15%)
Number of sources used to fund attendance	
1	55 (50%)
2–3	37 (34%)
4+	1 (1%)
Not reported	17 (15%)
Planned use of grant funds	
Bringing a family member/friend to the conference site	67 (61%)
Home care (funding for provision of care at your home)	12 (11%)
On-site care options (funding for Care.com, etc.)	11 (10%)
Transfer dependent to caregiver outside of home community	1 (1%)
Not reported	19 (17%)
Receiving family support grant influences future attendance	
Not at all/slightly/somewhat	39 (36%)
Moderately	30 (27%)
Extremely	21 (19%)
Not reported	20 (18%)
Most significant barriers to annual conference (could choose multiple options)	
Burden to my partner with dependent care	59 (54%)
Do not have someone to care for my dependent(s)	66 (60%)
Financial reasons	64 (58%)
I am breastfeeding or pumping breast milk	34 (31%)
I do not want to be away from my dependent(s)	52 (47%)
Unable to take time from work/get duties covered	8 (7%)
Other	20 (18%)
Not reported	17 (16%)
What is the greatest value in receiving this grant?	
Free up time and mental resources to focus on the science	51 (46%)
Alleviate the inconvenience of juggling caregiving and the meeting	11 (10%)
Would make or break my ability to attend for caregiving reasons (e.g., breastfeeding)	15 (14%)
Would make or break my ability to attend for fiscal reasons or financial support	11 (11%)
Other	4 (4%)
Not reported	17 (16%)

[1]Values are *n* (%) unless otherwise indicated. *n* = 110. Some categories were combined in the tables and results (e.g., very helpful and extremely helpful).

accrue by attending the meeting, above and beyond their normal caregiving costs, were evenly distributed between $201–$400, $401–$600, $601–$800, $801–$1000, and $1000 or more. The most commonly reported planned use of the grant funds was bringing a family member or friend to the conference site to assist with caregiving (61%). The most common barriers to attending the annual conference were not having someone to care for dependents (60%), financial reasons (58%), burden to partner with dependent care (54%), and not wanting to be away from dependents (47%). The majority of applicants reported that receiving the family support grant would moderately/extremely influence their future attendance (46%). The greatest value of the grant was reported to be greatly enhancing their experience and participation in the meeting by freeing up time and mental resources to focus on the science (46%) and that the grant would make or break their ability to attend for caregiving reasons (14%).

Twenty-five applicants received a family support grant and responded to the post-conference survey in 2018 and 2019 (**Table 3**). Of these recipients, the services used at the conference were bringing children into the exhibit hall (48%) and the lactation/pumping room (16%). Sixteen of 25 recipients (64%) used the grant funds to bring a caregiver to the conference site, 5 (20%) used the funds for provision of care at their home, and 4 (16%) used on-site care options (e.g., funding for use of Care.com). Compared with not receiving the family support grant, recipients agreed the family support grant helped them to attend

TABLE 3 Survey results from recipients of the grant[1]

	Values
Total survey respondents	
What family-friendly services did your family use at the conference?	
Bringing children into the exhibit hall	12 (48%)
Family support grant	25 (100%)
Lactation/pumping room	4 (16%)
Other	1 (4%)
What did you actually use the family support grant for?	
Bringing a caregiver (e.g., family member, nanny, friend) to the conference site	16 (64%)
Home care (funding for provision of care at your home)	5 (20%)
On-site care options (funding for Care.com, etc.)	4 (16%)
Compared with not receiving the family support grant, I agree/strongly agree the family support grant helped me to:	
Attend poster sessions	20 (80%)
Attend scientific sessions	24 (96%)
Attend the annual conference	23 (92%)
Network with other attendees	22 (88%)
Participate in career development activities	16 (64%)
Visit the exhibit hall	18 (72%)
Helpfulness of services for future meetings	
NutriLink[2] board where people could post that they were searching for/providing childcare	
Not helpful at all	1 (4%)
Somewhat helpful	12 (48%)
Very/extremely helpful	12 (48%)
Complimentary access to Care.com to assist in finding babysitters	
Not helpful at all	3 (12%)
Somewhat helpful	12 (48%)
Very/extremely helpful	10 (40%)
On-site childcare provided at the conference center, pay by the hour or day	
Not helpful at all	2 (8%)
Somewhat helpful	6 (24%)
Very/extremely helpful	17 (68%)

[1]Values are *n* (%). $n = 25$. Some categories were combined in the tables and results (e.g., very helpful and extremely helpful).
[2]NutriLink was ASN's online networking platform where users could share messages and discussions.

scientific sessions (96%), attend the annual conference (92%), network with other attendees (88%), attend poster sessions (80%), visit the exhibit hall (72%), and participate in career development activities (64%). The service for future meetings rated as most helpful was on-site childcare provided at the conference center, where parents or guardians could pay by the hour or by the day (68% rated very/extremely helpful).

Discussion

The objective of this study was to characterize the demographics, needs, and experiences of individuals who applied for and those who received a family support grant from ASN while attending the Nutrition annual meeting in the years 2018–2020. Our results demonstrate the average profile of family support grant applicants were women younger than 45 y from varied racial/ethnic groups who were at the trainee or assistant professor level and had parental responsibilities. Previous research indicates that early-career women are more likely to report caregiving responsibilities as a barrier to attending annual professional society meetings (7, 8); thus, the observed family support grant applicant profiles are generally consistent with the literature indicating who most frequently experiences barriers to annual meeting attendance and participation. Additionally, more than one-third of applicants reported currently breastfeeding or lactating, or pumping/expressing milk, which is common among individuals who identify as women of childbearing age, and often aligns with earlier career stages. Lactation, or expressing breast milk, has been cited as a significant barrier to academic success and attending professional society meetings (35, 36), thus suggesting that lactation resources should be considered when developing policies for creating more family-friendly conference environments. However, early-career women were not the only people applying for family support grants; individuals who identified as men or transgender, were 65+ y, or at the associate professor or full professor level also applied, albeit in much smaller numbers. Almost two-thirds of applicants had parental responsibilities, but individuals who were caregivers or had parental and caregiving responsibilities also sought family support grant funding. Thus, it may be helpful if family support grants are flexible enough to accommodate the range of people with caregiving needs.

An important observation made by our study includes identification of barriers to attending professional conferences that include care for dependents, financial limitations, perceived burden of adding dependent care to their partner while traveling, and not wanting to be away from dependents. All of these barriers could be accommodated with the provision of family support grants, and the majority of applicants reported that receiving a family support grant would influence their attendance at future meetings. For the individuals who received a family

support grant, the funds were primarily used to bring a family or friend to the conference site or to use on-site options at the conference site to provide care. Beyond the utilization of the family support grant, recipients also used the family-friendly services provided by ASN, including lactation/pumping rooms and the inclusion of children into the exhibit hall, even giving the children their own nametags. Recipients felt that the family support grant allowed them to have an enhanced participation and conference experience by freeing up time and mental resources to focus on the science so that they could attend the scientific sessions, network, visit poster sessions and the exhibit hall, and participate in important career development opportunities. Our results revealed the most helpful resource that could be provided at future meetings was on-site childcare provided at the conference center. Collectively, these data suggest that access to a family support grant and other resources supportive of caregiving can significantly enhance participation among attendees with caregiver responsibilities at professional society conferences and facilitate professional development, collaboration, and networking.

Out-of-pocket costs reported by applicants that were above and beyond their normal caregiving costs to attend the conference ranged from $200 to $1000 and above. Cost variation is likely a reflection in the number of dependents, type of care seeking (e.g., standard childcare vs. care for an older adult with special medical needs), distance to the annual meeting, travel options available, and variation in cost of labor by geographic location. One barrier to implementation of family support grants by professional societies may be the lack of awareness regarding the need for these resources, as well as a concern for how many people would apply and the resulting professional society cost for implementation. The ASN family support grant had 26 applicants in 2018, 56 applicants in 2019, and 28 applicants in 2020, for a total of 110 applicants over the 3 y. ASN offered up to $750 for each grant, and the median requested amount was $650. Thus, if ASN had supported every applicant at the median requested grant-funding level, this would have incurred a cost of $16,900 in 2018, $36,400 in 2019, and $18,200 in 2020. When averaging across the 3 y, if every applicant received $650, the mean cost would be $23,833 per year. Depending on the financial resources, professional societies could set limits on the amount of money provided by the family support grant, as well as the number of grants funded, to make it feasible for the society to fund such efforts. Additionally, funding for these types of initiatives is often attractive for external companies and foundations to support; thus, it may be possible for professional societies to seek external funding to cover the expenses.

To date, this is the first study to provide data on the demographics, needs, and experiences of participants applying for and receiving a family support grant. Although the novelty of the initiative and study is a significant strength, limitations include a lack of a control group or randomization, the COVID-19 pandemic leading to a cancellation of the annual meeting in 2020 (which did not allow for us to collect post-conference survey data that year), and a small sample size of recipients. An additional limitation is the percentage of survey outcomes not reported, sometimes above the level of 10%. Relying on applicant and recipient responses also means the data may not be inclusive or representative of all member needs or perspectives, particularly since not all recipients responded to the post-conference survey. Specifically, those who responded to the survey tended to be younger, White, and were not Hispanic/Latinx. Those who responded were also more likely to be married, in a domestic partnership, or living with someone and had parent or guardian responsibilities. Responders were more likely to be lactating, would use on-site care options, had fewer out-of-pocket caregiving expenses above and beyond normal caregiving costs, and reported that receiving the grant would influence future attendance. Despite these limitations, the data included herein will be relevant and applicable information for diversity, equity, and inclusion initiatives across professional societies.

Professional societies have been called upon to improve inclusivity and equity, in academia and beyond (6, 37). Through initiatives like a family support grant, professional societies have an opportunity to be a part of the solution in being inclusive and supportive of families, while also potentially attenuating the loss of early-career women, commonly referred to as the leaky pipeline (6, 32). Professional societies can do this by creating more family-friendly environments (8, 30–34), including provision of family support grants, access to childcare and lactation rooms at the conference, allowing children inside exhibit halls, and working to change cultural norms. It will be important for professional societies to develop and test these policies and programs at annual meetings to determine the short- and long-term impact on the primary caregivers of children and those with other significant caregiving responsibilities, which are disproportionately women (26–29). The current findings may be useful to professional society leadership to see that these services are needed and feasible. We hope to encourage and inspire leadership of professional societies to take the initiative to determine what proportion of their members would benefit from family-friendly annual meeting services, identify funding streams for family support grants, and characterize what family-friendly services would best serve its members (e.g., a lactation room). As a call to action, professional societies have a responsibility to implement policies and practices that are inclusive of those with families and caregiving responsibilities within their membership, particularly earlier-career women.

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Data Availability

The data underlying this article will be shared on reasonable request to the corresponding author.

References

1. Okahana H, Zhou E, Gao J. Graduate enrollment and degrees: 2009 to 2019. Washington (DC): Council of Graduate Schools; 2020.
2. Association of American Medical Colleges. 2018–2019: The state of women in academic medicine: exploring pathways to equity. Washington (DC): Association of American Medical Colleges; 2020.
3. Jena AB, Khullar D, Ho O, Olenski AR, Blumenthal DM. Sex differences in academic rank in US medical schools in 2014. JAMA 2015;314(11): 1149–58.

4. Carr PL, Raj A, Kaplan SE, Terrin N, Breeze JL, Freund KM. Gender differences in academic medicine: retention, rank, and leadership comparisons from the National Faculty Survey. Acad Med 2018;93(11):1694.
5. Ginther DK, Kahn S. Does science promote women? Evidence from academia 1973–2001, in science and engineering careers in the United States: an analysis of markets and employment. Chicago (IL): University of Chicago Press; 2009.
6. Cardel MI, Dhurandhar E, Yarar-Fisher C, Foster M, Hidalgo B, McClure LA, et al. Turning chutes into ladders for women faculty: a review and roadmap for equity in academia. J Womens Health 2020;29(5): 721–33.
7. Knoll MA, Griffith KA, Jones RD, Jagsi R. Association of gender and parenthood with conference attendance among early career oncologists. JAMA Oncol 2019;5(10):1503–4.
8. Sheffield V, Marcelin JR, Cortés-Penfield N. Childcare options, accommodations, responsible resources, inclusion of parents in decision-making, network creation, and data-driven guidelines (CARING) at Infectious Disease Week (IDWeek): parental accommodations and gender equity. Clin Infect Dis 2021;72(12):2220–4.
9. Silver JK, Ghalib R, Poorman JA, Al-Assi D, Parangi S, Bhargava H. Analysis of gender equity in leadership of physician-focused medical specialty societies, 2008–2017. JAMA Intern Med 2019;179(3):433–5.
10. Potvin DA, Burdfield-Steel E, Potvin JM, Heap SM. Diversity begets diversity: a global perspective on gender equality in scientific society leadership. PLoS One 2018;13(5):e0197280.
11. Olson EM, Kennedy CC, Kelm DJ. Assessment of gender parity: leadership representation in pulmonary and critical care medicine. J Womens Health 2021;31(3):439–46.
12. Jagsi R, Means O, Lautenberger D, Jones RD, Griffith KA, Flotte TR, et al. Women's representation among members and leaders of national medical specialty societies. Acad Med 2020;95(7):1043–9.
13. Kalavar M, Watane A, Patel MM, Sridhar J, Cavuoto KM. Gender representation in pediatric ophthalmology: an analysis of trends over a decade. J Am Assoc Pediatr Ophthalmol Strabismus 2020;24(6):340, e1–5.
14. Patel SH, Truong T, Tsui I, Moon J, Rosenberg JB. Gender of presenters at ophthalmology conferences between 2015 and 2017. Am J Ophthalmol 2020;213:120–4.
15. Rahimy E, Jagsi R, Park HS, Moran JM, Cervino L, Albert A, et al. Quality at the American Society for Radiation Oncology annual meeting: gender balance among invited speakers and associations with panel success. Int J Radiat Oncol Biol Physics 2019;104(5):987–96.
16. Isbell LA, Young TP, Harcourt AH. Stag parties linger: continued gender bias in a female-rich scientific discipline. PLoS One 2012;7(11):e49682.
17. Sharkey MS, Feinn RS, Tate VV, Carter CW, Cassese TT. Disproportionate participation of males and females in academic pediatric orthopaedics: an analysis of abstract authorship at POSNA 2009–2013. J Pediatr Orthopaed 2016;36(4):433–6.
18. Larson AR, Sharkey KM, Poorman JA, Kan CK, Moeschler SM, Chandrabose R, et al. Representation of women among invited speakers at medical specialty conferences. J Womens Health 2020;29(4):550–60.
19. Moheet AM, Mainali S, McCredie VA, Livesay S, Manners J, Rhoney DH, et al. A longitudinal study of gender parity trends of general membership and leadership in the Neurocritical Care Society between 2002 and 2019. Neurocrit Care 2020;35:1–8.
20. Holmes MA, Asher P, Farrington J, Fine R, Leinen MS, LeBoy P. Does gender bias influence awards given by societies? EOS 2011;92(47):421–2.
21. Calderwood AH, Roberts JA, Silver JK, Schmitt CM, Enestvedt BK. Representation by gender of recognition award recipients from gastroenterology and hepatology professional societies. J Womens Health 2021;30(10):1508–18.
22. Ellinas EH, Rebello E, Chandrabosee RK, Shilcutt SK, Hernandez M, Silver JK. Distinguished service awards in anesthesiology specialty societies: analysis of gender differences. Anesthesia Analgesia 2019; 129(4):e130–4.
23. Mainali S, Moheet AM, McCredie VA, Livesay S, Manners J, Rhoney DH, et al. The Neurocritical Care Society gender parity analysis in grants and recognition awards. Neurocrit Care 2021;35:358–66.
24. Silver JK, Slocum CS, Bank AM, Bhatnagar S, Blauwet CA, Poorman JA, et al. Where are the women? The underrepresentation of women physicians among recognition award recipients from medical specialty societies. PM&R 2017;9(8):804–15.
25. Lincoln AE, Pincus S, Koster JB, Leboy PS. The Matilda effect in science: awards and prizes in the US, 1990s and 2000s. Soc Stud Sci 2012;42(2): 307–20.
26. Family Caregiver Alliance. Women and caregiving: facts and figures [Internet]. 2003 June 23, 2021. Available from: https://www.caregiver.org/resource/women-and-caregiving-facts-and-figures/.
27. Misra J, Lundquist JH, Templer A. Gender, work time, and care responsibilities among faculty. Wiley Online Library. Sociological Forum 2012. doi: 10.1111/j.1573-7861.2012.01319.x.
28. Mason MA, Goulden M. Marriage and baby blues: redefining gender equity in the academy. Ann Am Acad Pol Soc Sci 2004;596(1):86–103.
29. Ly DP, Seabury SA, Jena AB. Hours worked among US dual physician couples with children, 2000 to 2015. JAMA Intern Med 2017;177(10):1524–5.
30. Flexman A, Shillcutt SK, Davies S, Lorello GR. Current status and solutions for gender equity in anaesthesia research. Anaesthesia 2021;76(S4):32–8.
31. Calisi RM. Opinion: how to tackle the childcare–conference conundrum. Proc Natl Acad Sci 2018;115(12):2845–9.
32. Bos AL, Sweet-Cushman J, Schneider MC. Family-friendly academic conferences: a missing link to fix the "leaky pipeline"? Politics Groups Identities 2019;7(3):748–58.
33. Calisi RM. Got milk, must conference. Science 2018;359(6377):838.
34. Sardelis S, Oester S, Liboiron M. Ten strategies to reduce gender inequality at scientific conferences. Front Marine Sci 2017;4:231.
35. Ladores S, Currie ER, Debiasi L. The challenges of taking breastfeeding infants to academic nursing conferences. Creat Nurs 2020;26(4):263–6.
36. Ladores S, Debiasi L, Currie E. Breastfeeding women in academia: pursuing tenure track versus "mommy" track. Clin Lactat 2019;10(1):11–16.
37. Cardel MI, Dean N, Montoya-Williams D. Preventing a secondary epidemic of lost early career scientists. Effects of COVID-19 pandemic on women with children. Ann Am Thorac Soc 2020;17(11):1366–70.